LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-12. (Canceled)

13. (New) An underwater flexible pipe for limiting lateral buckling of tensile armor plies of the pipe, wherein, from outside the pipe inward the pipe comprises:

an external sheath;

a first upper retention layer; an upper, radially outward tensile armor ply wound in a long pitch helix, and the first retention layer being wound around the upper tensile armor ply;

at least one second lower retention layer; at least one lower, radially inward tensile armor ply in a long pitch helix wherein a respective at least one second retention layer is wound around each of the lower tensile armor plies; and

an internal sheath inward of the at least one lower tensile armor ply;

wherein the first upper retention layer and the second lower retention layer have respective stiffnesses K_1 and K_2 selected so that the retention layers limit the swelling of the tensile armor plies underlying the retention layers.

14. (New) The pipe of claim 13, wherein the external sheath is a polymer sheath and the internal sheath is a polymer sheath.

15. (New) The pipe of claim 13, wherein the first retention layer stiffness K_1 differs from the second retention layer stiffness K_2.

16. (New) The pipe of claim 13, wherein the second retention layer stiffness K_2 is greater than the first retention layer stiffness K_1 .

17. (New) The pipe of claim 16, wherein the upper tensile armor ply and the first retention layer define an upper subassembly, and at least one of the second retention layers and the respective at least one lower tensile armor ply define a lower subassembly; the retention layers wound and by the respective lower tensile armor plies are selected and are of such a material that upon swelling of the lower subassembly, a radial clearance is produced between two consecutive ones of the subassemblies in the radial direction such that the subassemblies are thereby disassociated from one another and separated by the radial clearance.

18. (New) The pipe of claim 17, wherein each of the armor plies is comprised of an armor wire, and the radial clearance is less than 0.3e, wherein e is the thickness of the armor wire of the armor ply of the lower subassembly.

19. (New) The pipe of claim 13, wherein each of the retention layers is comprised of several unitary elements wound around the respective armor ply, and each of the unitary elements has along its longitudinal axis high tensile strength and low compression strength.

20. (New) The pipe of claim 19, wherein each of the unitary elements of the retention layer is comprised of a woven or a non-woven aramid fiber material.

21. (New) The pipe of claim 13, wherein each of the retention layers is comprised of an aramid.

22. (New) The pipe of claim 13, wherein the flexible pipe includes a metal carcass as an innermost element inward of the internal sheath.

23. (New) The pipe of claim 14, wherein the internal polymer sheath is the innermost element of the pipe.

24. (New) The pipe of claim 19, wherein the unitary element of a retention layer has a tension that is less than 50% of the tensile strength of the respective unitary element.